

# **THE BENEFITS OF BEVACIZUMAB PLUS CISPLATIN AND GEMCITABINE (BCG) VERSUS CETUXIMAB PLUS VINOBLASTINE AND CISPLATIN (CVC) IN PATIENTS WITH ADVANCED OR RECURRENT NON-SMALL CELL LUNG CANCER (NSCLC) IN SWEDEN: RESULTS FROM A COST-EFFECTIVENESS ANALYSIS**

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**OBJECTIVES:** New treatment options for advanced NSCLC can offer improved survival over standard chemotherapy, but should also offer value for money. Bevacizumab, a humanised monoclonal antibody (MAb) against VEGF, plus chemotherapy increases overall survival and progression-free-survival (PFS) in advanced NSCLC patients versus chemotherapy alone. Cetuximab, a MAb targeting EGFR, plus chemotherapy has also improved outcomes in these patients. This study compared the costs and life-years gained when treating patients with BCG or CVC in Sweden. **METHODS:** A Markov model is used to compare total health care costs associated with treating advanced or recurrent NSCLC with BCG or CVC. The model assumes patients move from pre-progressive to a progressed disease state to death, according to a set of transition probabilities derived from an indirect comparison (IC) of BCG and CVC efficacy in terms of PFS using respective pivotal trials data and appropriate IC methodology. Cost data were derived from local sources in Sweden. Drug costs assumed chemotherapy was given up to 6 cycles, cetuximab was administered initially at 400 mg/m<sup>2</sup> (then 250 mg/m<sup>2</sup>) weekly until progression and bevacizumab 7.5 mg/kg every third week was administered until progression. The model estimated average health care costs per patient treated with BCG or CVC. Sensitivity analyses were run with different subpopulation characteristics. **RESULTS:** The mean life-years in the model are 1.515 for BCG and 1.379 for CVC. The mean total cost of BCG treatment (SEK265,919) is lower than CVC (SEK336,033). Hence, adding bevacizumab to chemotherapy (SEK164,139) was less costly than adding cetuximab to chemotherapy (SEK242,681). Administration costs are lower for bevacizumab (SEK4,545) than cetuximab (SEK28,627). **CONCLUSIONS:** This comparison shows that therapy using bevacizumab is less costly and adds more life-years than therapy using cetuximab. When choosing between bevacizumab and cetuximab, bevacizumab offers a cost-saving approach to improving outcomes in patients with advanced NSCLC.

PCN80

# **COST EFFECTIVENESS ANALYSIS OF BORTEZOMIB IN PREVIOUSLY UNTREATED MULTIPLE MYELOMA PATIENTS IN CANADA**

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**OBJECTIVES:** In 2008, Health Canada approved an expanded indication for bortezomib in untreated multiple myeloma (MM) patients who are unsuitable for stem cell transplant. Treatment options for these patients include melphalan and prednisone (MP) or MP and thalidomide (MPT). The objective was to conduct a cost-effectiveness analysis of bortezomib and MP (VMP) compared to MP and MPT. **METHODS:** The VISTA study provided clinical evidence to support VMP versus MP. This study was a large, international, randomized study showing the clinical benefits of VMP over MP. There were no studies that directly compared VMP to MPT. A previously published comparison of MPT versus MP studies was updated to include more recent MPT studies, allowing for VMP to be compared indirectly to MPT. The economic model projected overall survival over a 10-year horizon for VMP, MP and MPT. The provincial Ministry of Health perspective was used. Observed overall survival data (at least 3-years) of VMP, MP and MPT was used from the relevant studies, and projected to 10-years based on information from similar type studies and survival hazard ratios. The survival projection was conservative for VMP as although the VMP and MP survival curves were diverging at 36-months, the projected VMP and MP survival curves remained parallel. Resource use included costs of drugs, outpatient cancer clinic, managing adverse events, supportive care and a subsequent line of MM treatment. **RESULTS:** The discounted QALY was 3.51 (VMP), 2.84 (MP) and 3.29 (MPT). The total cost was CAN \$59,117 (VMP), \$27,026 (MP), and \$52,225 (MPT). The ICER of VMP versus MP was \$48,294 and \$31,975 for VMP versus MPT. The parameter that was most influential in the sensitivity analysis was the survival difference. **CONCLUSIONS:** The new VMP regimen indicates good value for money, and is being adopted for funding by public cancer agencies in Canada.

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PCN82

# **COST-EFFECTIVENESS ANALYSIS OF HPV VACCINATION IN SLOVENIA**

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**OBJECTIVES:** The objective of the present study is to evaluate the cost-effectiveness of HPV vaccination alongside cervical cancer screening programme in Slovenia. **METHODS:** A Markov model representing natural history of HPV infection was adapted to Slovenian context. The model followed a cohort of 12 year-old girls until the age of 85 years. Two strategies were compared: HPV vaccination alongside conventional cytological screening versus screening alone. The analysis considered the benefits of HPV vaccination on the incidence of cervical cancer and precancerous cervical lesions. The analysis was performed from the health care payer perspective. **RESULTS:** Vaccination with screening compared to screening alone was associated

with an incremental cost-effectiveness ratio (ICER) of €7568 per quality adjusted life-year (QALY) gained and €13,494 per life-year gained (LYG). Sensitivity analyses demonstrated that the ICER was robust to parameters but was most sensitive to the need for booster dose and to different values of discount rates. **CONCLUSIONS:** According to the cost-effectiveness thresholds used in the developed countries, HPV vaccine to current screening programme in Slovenia can be regarded as cost-effective.

PCN83

# **COST-EFFECTIVENESS ANALYSIS OF HISTAMINE DIHYDROCHLORIDE + LOW DOSE INTERLEUKIN-2 VS STANDARD OF CARE FOR ACUTE MYELOID LEUKEMIA PATIENTS IN THEIR FIRST COMPLETE REMISSION: A UK PERSPECTIVE**

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**OBJECTIVES:** To determine the incremental cost-effectiveness of histamine dihydrochloride + low dose interleukin-2 vs standard of care (maintenance therapy) in patients experiencing their first complete remission from AML. **METHODS:** Data from a multi-national phase-III clinical trial (129 received drug and 132 standard care) provided rates for remission (leukemia free survival), relapse and death at 5 years. From the payor perspective, resources consumed (concomitant medications, blood products, emergency room visits, physician visits) were tabulated by treatment arm and assigned a unit cost from UK sources, discounted at 5%. The cost of relapse was estimated from the literature as patients from the clinical trial were not followed once in relapse. The cost of histamine dihydrochloride (used in conjunction with low dose interleukin-2) was not included in the analysis as no pricing has been established to date. Estimated drug cost was computed based on ICERs using £30K, £35K and £40K ceiling. **RESULTS:** Five-year Leukemia Free Survival (LFS) for drug and standard of care was 2.23 vs 1.75 years (P = 0.02), respectively. Mean cost/patient treated was £40,209 with treatment and £41,702 with standard care, which includes IL-2 cost (£3,600) for the complete 10 cycles. To compute the maximum cost of histamine dihydrochloride, ICERs were computed with £30K, £35K and £40K ceilings, to estimate acquisition costs for patients who receive all 10 treatment cycles. Acquisition costs were £24,265, £27,928 and £31,592, respectively. **CONCLUSIONS:** Maintenance therapy with histamine dihydrochloride + low dose interleukin-2 vs standard care for patients in their first complete remission from AML provides approximately 0.5 years more of LFS and can be done cost-effectively if acquisition costs are below reasonable thresholds. Increased LFS also reduces relapse rates, further contributing to cost savings.

PCN84

# **COST-EFFECTIVENESS ANALYSES OF DOCETAXEL VERSUS PACLITAXEL ONCE WEEKLY IN PATIENTS WITH METASTATIC BREAST CANCER PROGRESSED AFTER ANTHRACYCLINE CHEMOTHERAPY IN SPAIN**

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**OBJECTIVES:** To evaluate the cost-effectiveness of docetaxel versus a once weekly paclitaxel regimen in patients with metastatic breast cancer previously treated with anthracycline from the Spanish National Health Service perspective. **METHODS:** A Markov model with 21 days-cycle duration was developed to estimate the total treatment related costs and clinical benefits over 5 years of docetaxel (100 mg/m<sup>2</sup>) every 21 days and paclitaxel (80 mg/m<sup>2</sup>) once weekly regimen. Individual patient data were obtained from the TAX 311 clinical trial. Utilities values were obtained from published literature and unitary costs (€2009) from a Spanish health cost database and the Spanish Catalogue of Medicines. Cost and benefits (life years gained, LYG and quality-adjusted life years, QALY) were discounted at 3%. Probabilistic and deterministic sensitivity analyses were conducted. **RESULTS:** Docetaxel yields higher health benefits (1.83LYGs and 1.08 QALYs) than paclitaxel (1.46 LYGs and 0.84 QALYs). Global costs (treatment, concomitant medication, adverse events management, progression, best supportive care and end of life phase) per patient were €20,052 and €19,982 with docetaxel and paclitaxel, respectively. Incremental cost-effectiveness ratio (ICER) of docetaxel versus paclitaxel was €190/LYG and €295/QALY. Based on a €30,000/LYG or QALY threshold, docetaxel, compared with paclitaxel, has a 99% probability of being cost-effective. The ICER was mostly sensitive to the hazard ratio (when was varied from 1.46 to 1.09; €3517/QALY), the discount over the ex-lab price of Taxot® (75%; €6396/QALY) and the G-CSF prophylactic treatment (when administered in 60% of cycles instead 100%; cost saving). Variations of other inputs as time horizon (3–10 years), discount rate (0–5%) or adverse event cost (± 25%) were not shown relevant influence in the results. **CONCLUSIONS:** Compared to once weekly paclitaxel, docetaxel therapy is a cost-effective option for treatment in metastatic breast cancer patients.